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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,128	07/21/2006	Taiga Goto	1141/76639	2924
23432 7590 07/26/2007 COOPER & DUNHAM, LLP 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036			EXAMINER TANINGCO, ALEXANDER H	
			ART UNIT 2882	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/587,128	Applicant(s) GOTO ET AL.	
	Examiner Alexander H. Taningco	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-11 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/21/2006</u>  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Information Disclosure Statement*

Receipt of the Information Disclosure Statement (IDS) with copies of the reference cited therein, was received on 07/21/2006. An initialized copy of the IDS is enclosed with this office action.

### *Claim Objections*

Claims 3-5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 3-5 have not been further treated on the merits.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 6-11 rejected under 35 U.S.C. 102(b) as being anticipated by Ukita et al. (US 2003/0016791).

**With regards to claims 1, 6, 7, and 8**, Ukita et al. disclose an apparatus comprising: a detecting means **42** which is constituted by arranging a plurality of detector elements in 2- dimension and detects X-rays irradiated to a subject **M** and penetrated through the subject, means **40** for producing the detected data as projection data, a projection data memory means **60** which stores the produced projection data,

means for dividing an image reconstruction area having a predetermined size corresponding [not numbered 0022 see lines 6-7], to a region of interest of the subject into image data segments having an arbitrary size and an image reconstruction computing means [not numbered 0022 see lines 5-6] which performs an image reconstruction computing on the divided image data segment regions from the projection data and generates a 3-dimensional tomographic image (Abs), wherein the image reconstruction computing means includes an extracting means which extracts from the projection data the projection data segment region necessary for generating the 3-dimensional tomographic image of the image data segment regions, a projection data segment region memory means which stores **60** the extracted projection data segment regions and a 3-dimensional back projection processing means [not numbered 0004 see lines 7-10] which successively reads out the projection data segment regions stored in the projection data segment region memory means and performs 3-dimensional back projection processing for every respective corresponding image data segments [Abs., 0021, 0024, and Fig. 5-8] .

**With regards to claim 2**, Ukita disclose an apparatus wherein the processing speed of projection data segment region memory means is higher than that of the projection data memory means [0009 Lines 6-9 and 0023 Lines 9-22].

**With regards to claim 9**, Utika disclose an apparatus wherein the processing means calculates addresses on detecting means of the projection data to be back projected from the respective projection data segment regions to the respective corresponding image data segment regions according to a predetermined addressing

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formula for a plurality of representative reconstruction points in the respective image data segment regions and calculates addresses approximately through an interpolation for the remaining reconstruction points based on the calculated addresses on the detecting means of the plurality of the representative reconstruction points [0024; 0026 Lines 2-6].

**With regards to claim 10**, Utika disclose an apparatus wherein the 3-dimensional back projection processing performed by the processing means for the respective image data segment regions is performed by storing successively the data of the respective data segment regions and the data of the corresponding cut out projection data segment regions in a high speed memory in the image reconstruction computing means [0023 Lines 9-22].

**With regards to claim 11**, Utika disclose an apparatus wherein the cut out of the projection data segments corresponding to the respective image data segment regions by the processing means is performed based on the calculation of the addresses on the detecting means of the projection data corresponding to corner points of the respective projection data segment regions based on a predetermined addressing formula, the calculation of the maximum value and the minimum value among the calculated addresses on the detecting means and the calculation of a size of the projection data segments and of a reference address on the projection data segments from the calculated maximum value and minimum value of the addresses on the detecting means [0023-0024,0026].

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show:

Taguchi et al. (US 5,838,756) (378/4)

- Data of a specific detector column and specific channel is therefore backprojected to only a portion of voxels on the reconstruction plane. Hence, detector columns and detector channels to be backprojected to each voxel must be selected
- Backprojection means for backprojecting detected data to a centering plane which as been set so as to simplify the backprojection to voxels which are volume elements disposed in a three-dimensional space, and a

second backprojection means for backprojecting data backprojected to the centering plane to the voxels corresponding to backprojected data

Flohr et al. (US 6,307,909)

(378/4)

- Extrapolation ensues using reference data that were measured prior to the examination for the measuring field
- Reconstruct a partial subject within the gated reduced measuring field from segmented projections
- Computing outlay is reduced according to the lower number of channels that corresponds to the reduced measuring field

Yan et al. (US 6,765,983)

(378/8)

- Desired projection sets encompassing the region of interest can be extracted from the projection data set
- A region of interest in the reconstructed image of the object is segmented such that any particular structures of interest are within the segmented region

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander H. Taningco whose telephone number is (571) 272-8048. The examiner can normally be reached on Mon-Fri 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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